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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/349,177	12/02/94	GREY	H 14137-58-4

EXAMINER	
SCHWADRON, R.	
ART UNIT	**PAPER NUMBER**
1816	

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DATE MAILED: 12/23/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☐ Responsive to communication(s) filed on 6/24/96, 3/11/96, 9/17/96

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-18 is/are pending in the application.
Of the above, claim(s) 11-18 is/are withdrawn from consideration.
☐ Claim(s) _____ is/are allowed.
☒ Claim(s) 1-10 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.
☐ received in Application No. (Series Code/Serial Number) _____.
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
☐ Interview Summary, PTO-413
☐ Notice of Draftperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

–SEE OFFICE ACTION ON THE FOLLOWING PAGES–

15. Applicant's election with traverse of the species Group A (peptide of nine residues) and the peptide species (YIFATCLGL) in Papers No. 5 and 7 is acknowledged. The election of species as enunciated in the previous Office Action is maintained in modified form in that the species election required in paragraph 16 of said Office Action is now withdrawn. The traversal is on the ground(s) that are elucidated in Papers No. 5 and 7. This is not found persuasive because of the following reasons. Regarding applicants comments on pages 2-5 of the amendment filed 3/11/96 and the amendment filed 6/24/96, paragraph 15 of the Office Action mailed 2/6/96 required an election of species between the two species recited in paragraph 15. Upon the allowance of a generic claim (assuming a generic claim is found allowable) applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 C.F.R. § 1.141. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. § 103 of the other invention.

The requirement is still deemed proper and is therefore made FINAL.

16. Claims 11-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected species, the requirement having been traversed in Papers No. 5 and 7.

17. Claims 1-10 are under consideration.

18. Regarding the paper copy of the sequence listing submitted 9/17/96, the submitted copy lacked page 46. Applicant needs to submit this missing page.

19. Applicants need to update the status of all US patent applications listed in the specification (eg. abandoned, etc) including those disclosed on page 1.

20. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

21. Claims 1-10 are rejected under 35 U.S.C. § 101 because the claims encompass products of nature, and are thus not directed to patentable subject matter. The claimed composition encompasses naturally occurring 9-mer peptides found on the surface of HLA-A2.1 positive human cells. Applicant can overcome this rejection by amending the claims to read on a composition manipulated by man (eg. the peptide is isolated or purified) assuming that there is support for such a composition in the specification.

22. Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification is not enabling for the claimed composition of peptides wherein said peptides are "immunogenic". The specification discloses that an immunogenic peptide is "a peptide which comprises an allele-specific motif such that the peptide will bind an MHC molecule and induce a CTL response" (page 3, last paragraph, continued on page 4). The specification provides no evidence that the peptides recited in the claims are immunogenic. The specification provides no evidence that the binding data disclosed in the specification in Table 3 and 4 establishes that the peptides disclosed in said Tables are actually immunogenic (eg. capable of stimulating a T cell response). Celis et al. teach that in order to establish whether a peptide is immunogenic said peptide needs to be tested in assays that actually establish that a peptide is immunogenic (eg. CTL assay, etc.). Celis et al. teach that:

"In addition to MHC binding, other factors such as antigen processing, peptide transport and the composition of the T-cell receptor repertoire could determine whether any of these peptides can function as effective CTL antigens.".

No such data is disclosed in the specification with regards to peptides that are disclosed in Tables 3 and 4 of the specification. Rammensee et al. teach that "MHC/peptide binding assays have a history of leading to obsolete results" (see page 182, first column). Rammensee et al. teach

problems with interpreting data derived from said assays (see page 182, first column). It would require undue experimentation to determine which peptides encompassed by the formulas recited in the claims are actually immunogenic and which are not. Undue experimentation would be required of one skilled in the art to practice the instant invention using the teaching of the specification. See Ex parte Forman, 230 USPQ 546, BPAI, 1986.

In addition, the specification discloses that an immunogenic peptide "comprises an allele-specific motif ". However, the claimed peptides also encompass peptides that do not have an allele specific motif (eg. said peptides bind other HLA-A molecules). Rammensee et al. teach that a peptide encompassed by claim 1 also binds HLA-A68.1 (see page 197, peptide LVMAPRTVL). Therefore, said peptide does not possess an allele-specific motif.

23. Claims 1-10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 2 are indefinite in the recitation of "at the C-terminal position" because it is unclear what this means or encompasses. It is unclear whether this refers to position 9 of the claimed peptide or any position that is near the C-terminal of the claimed position (eg. position 8).

24. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

25. Claims 2,4,6,10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sette et al. Sette et al. teach the peptide ALWNLHGQA (see page 3897). Sette et al. teach a composition comprising said peptide (see page 3893, column 2, last paragraph).

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

27. Claims 1-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Falk et al.

The claims read on a composition comprising and therefore encompass peptide mixtures containing the peptide recited in the claims. Falk et al. teach a mixture of peptides eluted from HLA-A2 cells (see page 292, second column, last paragraph and Table 4). Falk et al. teach that HLA-A2 presented peptides are nonamers (page 293). Thus, the peptides contained in the aforementioned composition are nonamers. In view of the fact that said mixture contains a vast variety of different HLA-A2 binding peptides and said peptides encompass the amino acid residues as per Table 4, it appears that the mixture of peptides eluted from HLA-A2 cells contains the claimed peptide. Therefore the claimed composition appears to be same or similar to the composition of the prior art absent a showing of unobvious differences. Since the Patent Office does not have the facilities for examining and comparing the composition of the instant invention to those of the prior art, the burden is on applicant to show an unobvious distinction between the composition of the instant invention and that of the prior art. See In re Best, 562 F.2d 1252, 195 USPQ 430(CCPA 1977).

28. No claim is allowed.

29. Papers related to this application may be submitted to Group 180 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). Papers should be faxed to Group 180 at (703) 305-7939.

30. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Dr. Ron Schwadron whose telephone number is (703) 308-4680. The examiner can normally be reached Tuesday through Friday from 8:30 to 6:00. The examiner can also be reached on alternative Mondays. A message may be left on the examiners voice mail

service. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Ms Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 180 receptionist whose telephone number is (703) 308-0196.

RONALD B. SCHWADRON
PRIMARY EXAMINER
GROUP 1800

Ron Schwadron, Ph.D.
Primary Examiner
Art Unit 1816
December 11, 1996